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The effect of implants on gain of steers and heifers grazing native grass

Abstract

Four trials were conducted to determine the effect of different implants on steers and heifers grazing native grass pastures for different lengths of time. In addition, two groups of steers were followed through a feeding period to determine if previous implanting had a residual effect on gain. The implanted (Ralgrofi, Ralgrofi Magnum, Synovex Sfi) steers gained faster than the controls; however, no differences in gain occurred among implants. In the finishing group that went on grass at 687 lb, implants had no effect on subsequent feedlot gain. In the second group (on grass at 569 lb and grazing for 80 days), controls gained faster in the feedlot than those that had been implanted on grass, resulting in essentially equal weights for all treatments. Among the heifer groups, no differences occurred in pasture gains. Genetic differences in cattle, length of grazing, and other factors may change implant results.

Keywords

Cattlemen's Day, 1996; Kansas Agricultural Experiment Station contribution; no. 96-334-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 756; Beef; Implants; Native grass; Stocker cattle gains

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THE EFFECT OF IMPLANTS ON GAIN OF STEERS AND HEIFERS GRAZING NATIVE GRASS ¹

F. K. Brazle ²

Summary

Four trials were conducted to determine the effect of different implants on steers and heifers grazing native grass pastures for different lengths of time. In addition, two groups of steers were followed through a feeding period to determine if previous implanting had a residual effect on gain. The implanted (Ralgrofi, Ralgrofi Magnum, Synovex Sfi) steers gained faster than the controls; however, no differences in gain occurred among implants. In the finishing group that went on grass at 687 lb, implants had no effect on subsequent feedlot gain. In the second group (on grass at 569 lb and grazing for 80 days), controls gained faster in the feedlot than those that had been implanted on grass, resulting in essentially equal weights for all treatments. Among the heifer groups, no differences occurred in pasture gains. Genetic differences in cattle, length of grazing, and other factors may change implant results.

(Key Words: Implants, Native Grass, Stocker Cattle Gains.)

Introduction

Implants have been used for years in grazing and feedlot cattle. With the variety of implants available, and differences in weight, grazing time, sex, etc., a number of implant strategies are possible. The objective of this study was to evaluate combinations of implants, sex, and length of grazing time in relation to cattle gain.

Materials and Methods

Trial I. Yearling steers (British Continental crossbred) were purchased in late winter and spring and were not implanted until being placed on native grass in April. Steers were allotted randomly to 1) Ralgrofi, 2) Ralgrofi Magnum, 3) Synovex Sfi, or 4) control (no implant) treatments. The steers grazed one burned native grass pasture for 81 days and were stocked at one steer per 2.5 acres. Steers had access to a free-choice salt-mineral mixture containing Rumensin[®] (150 mg/hd/day).

The steers were shipped to the Brookover Ranch feedlot at Garden City and were all implanted with Revalor[®] at days 1 and 60 during the 130-day feedlot. Carcass weights were collected for the steers at slaughter and live weights were determined by using a standard dressing percent of 64%.

Trial II. Yearling steers (British Continental crossbred) were purchased in the spring and were not implanted until being placed on native grass in April. The crossbred steers were allotted randomly to: 1) Ralgro, 2) Ralgro Magnum, 3) Synovex S, or 4) control (no implant) treatments. The steers grazed eight burned native grass pastures. All treatments were allotted equally to each pasture. One hundred fifty-four steers were grazed in four pastures (80 days) stocked at one steer per 2 acres. The other 106 steers were grazed in four pastures (110 days) stocked at one steer per 3 acres. Steers had access to a free-choice salt-mineral mixture containing chlortetracycline

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(350 mg/hd/day).

The steers grazed for 80 days and then were shipped to Great Bend Feeders and fed for 136 days. They received the Revalor implants at days 1 and 60. Carcass weights were collected, and live weights were calculated as in Trial I.

Trial III. Yearling heifers (British Continental crossbred) were purchased in late winter and spring and were not implanted until being placed on native grass in April. The heifers were allotted randomly to: 1) Ralgro, 2) Synovex Hfi, or 3) control (no implant) treatments. All treatments were allotted equally to each pasture (stocking rate, one heifer per acre) and grazed for 88 days. Heifers had access to a free-choice salt-mineral mixture containing Rumensin (150 mg/hd/day).

Trial IV. Heifer calves (British Continental crossbred) were purchased in the spring and were not implanted until being placed on native grass in April. The heifers were allotted randomly to: 1) Ralgro, 2) Synovex Hfi, and 3) control (no implants) treatments. Heifers grazed burned native grass pastures at a stocking rate of one heifer per 4 acres for 147 days. Heifers had access to a free-choice salt-mineral mixture containing Rumensin (150 mg/hd/day).

All implants were placed aseptically in the mid-third of the ear. Old implants were removed from the steers' and heifers' ears in all trials, but the stage of activity could not be determined.

Results

In Trial I involving 700 lb steers, all implanted steers gained faster on grass (Table 1, $P<.02$) than controls; however, no differences occurred among implants. The previous (grass) implant treatments had no effect on feedlot gains.

In Trial II (Tables 2 and 3) with 500 to 600 lb steers, no differences occurred among implant groups in pasture ADG, but all implanted steers gained faster ($P<.01$) than the nonimplant steers. Control steers that grazed for 80 days gained faster ($P<.05$) than Ralgro or Ralgro Magnum groups in the feedlot after all steers were implanted with Revalor (Table 2). Consequently, weights of steers not implanted on grass were equal at slaughter to the average weight of the steers implanted on grass.

In Trial III (Table 4), no differences occurred in ADG among treatment groups for heifers placed on grass at 500 to 600 lb and grazing for 88 days.

In Trial IV (Table 5), no differences in ADG occurred among treatment groups of heifers grazing for 147 days.

The interaction between effects of implants on grazing cattle and on feedlot steers may be confounded with types of implants in both phases relative to cattle weight on grass, ADG, and length of time grazed. A clearer picture of how implanting cattle on grass interacts with implanting in feedlot cattle is needed to fully maximize the benefits of implants under both grazing and feedlot conditions. For 500 to 600 lb steers, not implanting on grass and implanting with Revalor in the feedlot may result in slaughter weights equal to those of steers implanted on grass and implanted with Revalor in the feedlot.

Table 1. Effects of Implants on Steers Grazing Native Grass Pastures for 81 Days and Fed for 130 Days in a Feedlot

Item	Ralgro	Ralgro Magnum	Synovex S	Control
No. steers	26	24	26	25
<u>Pasture</u>				
Starting wt, lb	688	686	685	689
Ending wt, lb	825	812	810	801
Gain, lb	137	126	125	112
ADG, lb	1.69 ^a	1.56 ^a	1.55 ^a	1.37 ^b
<u>Feedlot</u>				
ADG, lb	3.74	3.65	3.86	3.86
Slaughter wt, lb	1311	1287	1312	1303

^{a,b}Means in the same row with unlike superscripts are different (P<.02).

Table 2. Effects of Implants on Steers Grazing Native Grass Pastures for 80 Days and Fed for 136 Days in a Feedlot

Item	Ralgro	Ralgro Magnum	Synovex S	Control
No. steers	40	38	38	38
<u>Pasture</u>				
Starting wt, lb	563	580	563	569
Ending wt, lb	790	803	782	765
Gain, lb	227	223	219	196
ADG, lb	2.83 ^a	2.78 ^a	2.74 ^a	2.46 ^b
<u>Feedlot</u>				
ADG, lb	3.52 ^d	3.43 ^d	3.69 ^d	3.78 ^c
Slaughter wt, lb	1269	1269	1283	1279

^{a,b}Means in the same row with unlike superscripts are different (P<.01).

^{c,d}Means in the same row with unlike superscripts are different (P<.05).

Table 3. Effects of Implants on Steers Grazing Native Grass Pastures for 110 Days

Item	Ralgro	Ralgro Magnum	Synovex S	Control
No. steers	26	25	26	25
Starting wt, lb	594	577	566	573
Ending wt, lb	878	855	859	816
Gain, lb	284	278	293	243
ADG, lb	2.58 ^a	2.53 ^a	2.66 ^a	2.21 ^b

^{a,b}Means in the same row with unlike superscripts are different (P<.01).

Table 4. Effects of Implants on Heifers Grazing Native Grass Pastures for 88 Days

Item	Ralgro	Synovex H	Control
No. heifers	51	46	47
Starting wt, lb	536	539	549
Ending wt, lb	705	708	709
Gain, lb	169	169	160
ADG, lb	1.92	1.92	1.82

Table 5. Effects of Implants on Heifers Grazing Native Grass Pastures for 147 Days

Item	Ralgro	Synovex H	Control
No. heifers	38	36	39
Starting wt, lb	485	490	495
Ending wt, lb	727	764	739
Gain, lb	242	274	244
ADG, lb	1.65	1.86	1.66